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Air Force, industry join to produce multi-role laser

by Rich Garcia, Directed Energy directorate

KIRTLAND AFB, N.M. — Emergency battle field surgery is but one expected use for a compact, battery-operated laser that will be produced under an agreement signed May 17 by the Air Force Research Laboratory and a commercial laser manufacturer.

Under the arrangement, both sides will combine complementary expertise and technologies to meet military and marketplace needs.

With minor modifications, the infrared laser system can also can be used to send a low-power beam of light, visible only with special goggles or instrumentation. This could be used to "spotlight" and secretly observe the movement of enemy troops at night or to detect illegal activities that might be taking place under the cover of darkness.

Among what the Air Force brings to the collaboration is a portable, battery-operated laser called Medpac, which was developed by the directorate's Laser Applications branch. This was produced, in part, with branch expertise in highly efficient designs for laser driver and thermoelectric cooler circuits.

The commercial manufacturer, Fiber Optic Fabrication, is adding its expertise in highly effective lasers and — just as importantly — fiber-optic systems that can efficiently carry laser energy. This is significant because the laser energy would be transmitted from the laser through a fiber optic line.

The company is also planning to involve a line of 980-nanometer diode laser systems with power outputs in the 15-, 25- and 50-watt ranges. The wavelength is important because it reacts well with body tissue when used in medical applications. Air Force officials said that the laser can also be used to accelerate the healing of certain wounds.

The end product is expected to be a hybrid Air Force-industry laser with fiber coupling schemes that have increased power density, or brilliance. **@**